

# This Old House



restoring the  
**doors** of  
**Nantucket**

**PLUS:**

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hacksaws  
kids' tools**

Norm Abram  
and owners'  
daughter  
Morgan Bentley  
at the fall TV  
project house

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Tuesday, November 26

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SONY

# features

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After a roof fell up on his house last winter, Steve Thomas made a promise: Never again. Following contractor Tom Silva's lead, he spends a crisp fall day making sure water won't plague him this year. By Wendy Talbot

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Sometimes it's not what you put in your yard, but what you keep out, especially when it comes to dirt. Play, how to build a cold frame that will give your garden a head start and why Rose March prefers jenny kelpies.



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On the cover: Matt Adams and Margot Smith's Nantucket project house is one for the books. Photograph by Katie A. Rader

# up front

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## Crackling Good

If a gas-log fire looks real, is it still fake?

BY JEANNE MARIE LASKAS

**a**t the moment I have my head in the fireplace I am sprinkling a bag of fake embers around the ceramic logs punched just so on the laboratory-tested radiant heat chamber. I'm trying to pile the fake embers high enough to conceal the on/off fingertip flame control, but not so high that I can't reach it. Okay, there we go. That looks good. That looks so...natural.

Click. I turn the fireplace on. Pweesh. I have fire. The flames dance like happy ballerinas around the Royal English Designer Oak ceramic logs. They look so...natural.

But they are fake. Everything is fake. They are gas logs. It takes some courage to admit that. Never in the name of carbon monoxide poisoning could I have imagined myself ending up this way. But then I had my gas-log awakening. This is my last money.

I grow up a second suburban kid who knew good taste from bad. Good taste was the popular kid, boring stuff my parents did, and bad taste was the wacky but fascinating stuff other people did. Good taste was the conservative Christmas lights—red, green, red, green—that lined the roof of our ranch house. Bad taste was the flanking, wing-flapping angels and twinkling Wise Men down in my friend Maria's house.

Good taste was the basic log-burning fireplace we had that went crackle, crackle, and as a form of which we sipped hot chocolate. Bad taste was the tree in my best friend Judy's house, which basically consisted of a red cellophane cylinder

spanning around a 60-watt bulb. It went where from the sound of the cello, and no one sat in front of it because there was a corked-up plastic cocker spread occupying that spot.

I adored Judy because of these things—although not half as much as I adored Bridget, whose mother had 14 blind wigs on messenger bags in her bedroom. (White wigs growing up in the suburbs was boring.)

Somewhere deep inside, I knew I was not a person destined to have a fake fireplace, just as I knew I wouldn't end up with wigs and no living status. I was raised with mid-century family values. Then I became an adult with my own house. That is when things got tricky.

Okay, wait a second here. This fireplace is not right. How come these dancing flames have only one room?

Over and over again they go looking in exactly the same rhythm. Click. I turn the fireplace off. I reposition the radiant heat chamber so as to allow more space between logs two and four. Click. Pweesh. No, that's not quite right either. I think back and try to remember how Kerry,



ILLUSTRATION BY STEVEN GUARACCI



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the fireplace guy, or this thing up when he snuffed a love pest.

Kenny did not particularly want to install gas logs in my fireplace. He had come to repair my 100-year-old chimney, which was a crumbling mess inside. The inside hole, however, which would likely eat the house alive, I was told by building inspectors. So for years I used the fireplace just as a decorative. I put some pretty larch logs in there and got on with my life.

But then I got into a serious wood-chopping mood. When happened was I got those new shippers, the maple income tax, and a sad flannel bedsheet for Christmas. I was sporting a

**That's the thing about  
gas logs. They sound  
really stupid,  
but they look  
really beautiful.**

Enter Kenny. The next year,

he could put a liner in my chimney. All he'd have to do was tear out a shower stall on the second floor and rip out a closet on the third floor and park eight various beams in my living room ceiling. And all I'd have to do was pay him \$3,100.

"Hello!" I said to Kenny, but he could tell when I really meant was "Good-bye."

That was when he told me about the gas-log option, only when he said it, his lip sort of curled.

"You don't need two persuaders," I said.

"Well, my boss just started carrying those, and he said we have to tell people," he said. "But myself, I like a real fireplace."

He told me that the gas logs wouldn't require a new chimney liner. No tearing up of anything. The existing chimney would make its debut once for the fumes. He could install the whole thing in a few hours for about \$100. So I went for it. And I did not look back. I did not think about the occasion of my family or friends when I was faced with the task of telling them that I had become a person with gas logs. I just thought: Flames in the fireplace are better than no flames in the fireplace.

Kenny did the installation. He swapped the Royal English Designer Oak logs. He sprinkled the magic incense (which he is the pilot light). Pardon? The flames came on.

"Wow!" Kenny said. "That looks really great!" He seemed surprised. "It really does!" I said. I was surprised. We stood there together, two people staring at a gas-log installation.

You don't forget a moment like that, I'm warning Kenny was here now. I don't think I'm doing a very good job with these embers. The embers, by the way, are supposed to last a lifetime—unless your car reminds them not to last. Which is what my car, Bob, did. That's why I'm replacing them.

Hold on. All right. That's better. Click. Pardon. Not bad. It's important to get it right. You never know when someone might come by who has not yet experienced his or her gas-log awakening. Someone with a mind to mock you, worse you, maybe you feel a need for getting gas logs.

Someone like my sister. Or my other sister. Or my brother. "Gas logs?" my sister said when I made the official announcement to my family. "Ew," she said.

"Gas logs?" my other sister said.

"Gas logs?" my brother said. "Next thing you know, you'll get poxides."

Poxides? What did poxides have to do with that? "Forget it," I said. "Just forget I ever brought it up." But they didn't. They made fun of me long into the night. About a month later my parents came to visit.

I turned on the fireplace. And right then and there it happened. "John," my mother said. "Look at that."

"Wow!" my father said. "Clear, I think we should get some gas logs!"

That's the thing about gas logs. They sound really stupid, but they look really beautiful.

And so two more people were awakened. My dad went out and got the Split Oak version, which I have to admit is more prettier than the Royal English Designer Oak. My sister saw it. My niece and nephews saw it. And long, long, long, it went around the family. Everyone got convinced except my brother. He says real ones is real ones.

I say: real ones is real ones. Because I now have a fire whenever I want it. I go click, wood, every morning while I drink my coffee, sitting here in my Eddie Bauer cafe. I go click, wood, every evening when I come home. The only thing I don't have is the crackle, crackle sound. Or the smell of burning oak. But I've gotten used to that.

So now I'm told you my story. And my new embers are in place. Click. I turn off the fireplace. I put a screen in front of it to keep the cat out. I go to bed, and don't think about it.

I avoid the next morning to the sound of someone opening my front door. It's Helen, the woman who cleans my house. I go down and go downstairs and say hello. She's all happy. She just got a new thing too.

"Look, what a great job it did on the fireplace!" she says. I look. Helen has just washed all of my perfectly arranged fake embers into her shop vac. I don't know quite what to say. I don't say anything. I make it a compliment that my fake embers looked real enough to fool a person who really knows dirt.

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# Letters

I had a ground source heat pump installed in the fall of 1994. Prior to this, our heating source was a coal stove backed up by electric radiators. Our average electric bill was about \$85 per month, plus \$350 per season for coal. After the change to geothermal, our average electric bills nearly tripled, to about \$210 per month. Your July/August article on ground source heat suggested that I should be saving money. How can I tell if my system is working within the range of normal operating costs?

Eric R. Edstrom  
Jasper, Idaho, PA

Jim Bove, executive director of the International Ground Source Heat Pump Association (IGSHPA), says electricity bills for ground source heat pumps should be about a dollar a day for each 1,000 square feet of floor space heated or cooled. If your bill seems excessive, the culprit could be poor soil conditions or improper installation. Loose rocks or clay soil left around heat pump loops tend to settle and clamp, causing the spaces that inhibit proper heat transfer. One solution involves digging up the heat pump loop trench, filling it with plastic and filling air spaces with sand or water. To avoid such problems when installing a pump, choose a contractor who has completed an IGSHPA-sponsored installation course.

I was surprised to see Richard Trethrean on the cover of the July/August issue shoulder-high in a trench excavation without proper safety precautions. With a technique shown in the background, I can only hope Mr. Trethrean had enough common sense not to be in the trench while the shoring equipment was operating.

David R. Davidson Jr.  
Baton Rouge, LA, MD

State and federal regulations dictate that any ditch more than five feet deep must have some sort of safety feature, such as shoring or steel stepped walls, or walls lined back with shales and timber or hydraulic jacks. In the case of our cover photo, the ditch for the ground source heat pump loop was only four feet

deep and posed no danger. "It might have looked deeper because of Richard's height," says Greg Gottschalk, the project contractor. "Richard's not a really tall guy." In proper shoring contributed to the more than 30 fatalities from trench accidents in the U.S. last year, according to the Occupational Health and Safety Administration.

Your May/June *Estates* article on pest mice ("Give the Bogs") was misleading when it said that "every year, more than 40,000 acres of the privately owned staff are strip-mined from sphagnum moss bogs in Canada and the United States." We do not harvest 40,000 acres each year; rather, less than 40,000 acres have been opened

for harvesting over the 80-year life of the industry. Barry Mead, president of Canadian Sphagnum Peat Moss Association, Alberta, Canada.

Mr. Mead is correct in stating that just under 40,000 acres is the total amount of land devoted to peat harvesting. Although peat moss regrowth is quite quickly enough to be considered a renewable resource, the World Wildlife Fund says habitat loss from these 34,500 acres—a small percentage of Canada's 275 million acres of peat bogs—is still a concern. "Peat bogs are very specific ecosystems because they're so solid," says Constance Hunt, director of the Fund's Freshwater Ecosystem Conservation program. "They support plant life found nowhere else

and take hundreds of years to regenerate. In terms of biodiversity, loss of peat bogs is pretty significant." Other ecological concerns include the release of carbon dioxide into the atmosphere and the possible pollution of aquatic areas downstream from harvest sites.

How might I go about locating an apprenticeship in old-house restoration?

Walter Davis  
via e-mail

By calling your state's department of labor, employment or human resources. Almost all construction-related occupations have for all apprenticeships. Usually sponsored by employers with a support from schools and government agencies, these four-year programs provide technical knowledge and hands-on skills to 150,000 people each year. Norm Adams, who was trained on the job by his father, supports the idea. "Because the construction trade is getting more technical, it is important to learn not only the manual skills but the technical and technical skills too."

## punch list

attention: a list of items incorrectly shown or mentioned in the March or a construction job

After discussion on page 7 of the September/October issue was properly ordered. The error is below (circled).

On page 10 of the March/June issue, picture of the interior of the house was shown. The photo credit is 10/10.

On page 10 of the March/June issue, picture of the interior of the house was shown. The photo credit is 10/10.

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# extras

## cool junior tools

People who assume only be all right for kids who are current to build cars, boats, and building woodwork deserve a new look and good. A lot of wood for their projects. Most tools sold by toy companies are too flimsy for useful woodwork projects like building and ship models. Buy the tools for your child, but consider length and weight like hands-on message. Smaller is better than to be too big. Good should be cheap to prevent frustration, but for safety, metal that children get used to a new and keep both hands on the new. Young children will have greater success using wood with a step or a squarehead. Kids have power tools, but metal should not be used up to before using a power drill or a chainsaw and under says Leslie Brink, who teaches woodworking to elementary school children in Cambridge, Massachusetts. At 12, the kids, some kids, are ready for metal joints. Round out a junior tool set with clamps, nails and screws, a rubber mallet, a tape measure, glue, sandpaper and hand saw in bright colors.



Drill bits are essential when kids scratch rocks or grout to power drills and sanders. A torque level fits in a kid-size tool box.



## REBUILDING History

In 1991, hundreds of houses in the ancient Adriatic seaport of Dubrovnik were destroyed by Serbian and Montenegrin artillery. Today, reconstruction is under way in the now peaceful city. To speed rebuilding, the Institute for the Restoration of Dubrovnik offers homeowners free replacement roof tiles. Those who want to help from afar can join the Institute's Buy-a-Tile campaign. The minimum contribution is \$90 (tax-deductible). Donors get certificates showing they helped restore a city where streets are paved in marble.



Tool belts. Essential for the home-improvement tool. The one at right comes with a flashlight, hammer, tape measure and tape knife.



Hand drill. The egg-beater design works with small-diameter bits. For larger holes, use a brace.



Sawing wood. Good for curves. For straight, remove the blade, insert it through a hole in the wood, then reattach blade to handle.



Hammer. The 3-to-10 lb. model at left is good for shingling. The 10-lb. model at right is good for shingling. The 10-lb. model at right is good for shingling.



Compass saw. Better for kids than a standard saw, it's easy to use with both hands and cuts quickly. A sawing on the blade helps the saw glide in the cut.



Spikesaws. Even young children can handle this tool. Place a board on the saw and use the spikes to saw the board.



## marble-ized

Those who want subtle and precise their granite for marble will be fascinated by Lighthouse granite—marble-granite hybrids that look like marble but have the strength and durability of granite. Lighthouse granite is made by combining granite with a resin and a marble-granite hybrid. The result is a material that looks like marble but has the strength and durability of granite. Lighthouse granite is made by combining granite with a resin and a marble-granite hybrid. The result is a material that looks like marble but has the strength and durability of granite.

## curvy trim

Flexible plastic moldings do 360s without breaking or deforming—more than can be said for wood, which must be steamed, kerfed, laminated or otherwise beaten into submission. The cost per linear foot is higher than wood, but the plastic can simply be nailed or screwed in place, saving some labor costs.

## Attention, Spineless

Softcover as opposed to hardcover books are popular for their ease of use, but they have a major drawback: they don't hold their shape. The result is a book that is flat and unattractive. The solution is to use a spineless book. Spineless books are made of a flexible material that can be bent into any shape. They are perfect for use in a library or a bookstore. They are also perfect for use in a home. They are perfect for use in a home. They are perfect for use in a home.

"In most old houses, the rooms that need the most work are kitchens and baths."

Steve Thomas



## Take It for Granite

Recycled newspaper and soy bean meal are the ingredients for a new product called Granite. It is a material that looks like granite but is made from recycled newspaper and soy bean meal. It is a material that looks like granite but is made from recycled newspaper and soy bean meal. It is a material that looks like granite but is made from recycled newspaper and soy bean meal.



## May the Force Be with You

A hand-drawn sketch of a person's head and shoulders, showing the person's face and hair. The sketch is done in a simple, line-art style. The person is looking slightly to the right. The sketch is done in a simple, line-art style. The person is looking slightly to the right. The sketch is done in a simple, line-art style. The person is looking slightly to the right.

PHOTO COURTESY OF THE WOODWORKING MISTAKE BOOK

## FITS IN THE SHOP WALL

The new Mister Mister wood shop is a great idea. It is a shop that is designed to be a great idea. It is a shop that is designed to be a great idea. It is a shop that is designed to be a great idea. It is a shop that is designed to be a great idea. It is a shop that is designed to be a great idea.

## VENTING FRUSTRATION

Problems of the home should be solved by the home. It is a problem that should be solved by the home. It is a problem that should be solved by the home. It is a problem that should be solved by the home. It is a problem that should be solved by the home. It is a problem that should be solved by the home.

## GREAT DORMS, PART 1

Building a house isn't easy, but it's even harder when you're building a dorm. It's a building that is designed to be a dorm. It's a building that is designed to be a dorm. It's a building that is designed to be a dorm. It's a building that is designed to be a dorm. It's a building that is designed to be a dorm.



## Making Mistakes Gracefully

Any do-it-yourselfer who wants to cut down on the inevitable goof-ups that come when working with wood ought to do two things. Remember from the advice to measure twice before cutting anything, and read *Fixing and Avoiding Woodworking Mistakes* by Sander Hovav. It's a book that is designed to be a great idea. It is a book that is designed to be a great idea. It is a book that is designed to be a great idea. It is a book that is designed to be a great idea.



# A CAR IS BORN.



May 15, 1999  
Inspired by childhood memories,  
a designer at Chrysler's California  
design studio, and his dad needs  
"perfecting the roll" on a 3" x 5" card.



August 13, 1999  
Chrysler's chief  
engineer's office  
makes design sketch of  
the car's engine and wheel  
assembly. That evening,  
a group gathers to discuss  
how to build the car.



September 16, 1999  
Chrysler Design Chief Tom Gale  
works on his own custom steel roll.



May 9, 1991  
Chrysler's management gets word of  
project. Sketched from President Bob Lutz:  
"If you want this to be the light of day, it  
better have one hell of an attitude."



May 26, 1991  
Lutz's design team meets to  
discuss the car. Drawing, he  
agrees with recommendations  
to build full-size version.  
Project is named "Ponder."



February 1, 1996  
"The only reason more companies than  
anyone in Ponder show are a building, is not for sale  
to the public. Ponder show that is not just design  
or concept, Chrysler Corporation needs to do just  
that." Mike Smith, February 1996



January 30, 1996  
Working closely with John and Edward,  
Chrysler's Chairman Bob Lutz and  
Bob Lutz's son, Ponder's prototype car  
Detroit Auto Show to showcase  
the car will become a limited  
production 1997 Ponder.



April 15, 1996  
First prototype body parts,  
fabricated mainly from  
aluminum, are delivered.



January 7, 1995  
Ponder show car  
debut at Detroit Auto Show,  
followed by  
professional photo  
to put it into production.



May 16, 1993  
Chrysler team meets in the  
NASCAR Show East Motorsports  
for research, inspiration,  
and racing performance  
by their name and  
Chrysler's history.

What's the point of building an outrageously cool  
concept car if the closest anyone can get to it is  
behind a velvet rope at some auto show? That's what  
we thought too. At Chrysler Corporation, concept

vehicles aren't just exercises in corporate vanity.  
They're laboratories for testing new ideas. When  
people respond to those ideas, we pay attention.  
Sometimes we incorporate them into your next car,

truck, sport utility, or minivan. And sometimes we  
actually produce that heart-stopping design you saw  
up on the stand. It's what you do when great cars are  
what you're about.

**GREAT  
CARS.** CHRYSLER  
CORPORATION



## Sand and Deliver

A belt sander strips and flattens with single-minded dog-

BY MARK FEIRER PHOTOGRAPHS BY MARTIN MISTRETTA

here's the problem. A room contains 12 tables. Every table has four legs; every leg has three benches glued into it, and every bench sticks out half

It's a belt-and-suspenders 40-grit belt. Two strands of stainless-steel processing pipe, no dirt in just 60 seconds. That's the mark of a high-line tool.

But readers are the things that are making me change. And, again, it's a gift to me that everything is a fairy tale story, they make sense naturally. I'm not in one place, even for a moment, they're down the hallway, wood. That's home. "You are in some more change."

There are multiple factors that trigger events, a mission, a deadline, and two engines to guide the revolving scheduling ball over a flat base plate. The motor drives the rear roller, the flyer roller has a lever to sliding pulley that keeps the belt taut. The motor is usually powered electric and synchronous to the rotating belt loaded conveyor, but some compact models have in belt motors.

Shiatsu is also most important for people suffering from lower back aches. The Ryo-gatsu, being 4 inches wide

Less the teeth, fumes, & RF heat, this tool might be preferred for a bulkman. Considered heavy equipment in the handworking world, a bulk vendor might be practiced hand to using the subjective indicators under control.

**ALAN L. LUTZ, PhD** is a brand equity expert. He has written more than 100 articles on the subject.

**SLIP PLATE:** Also called wear plate or slide, the flat surface across the working half of the work.

**WOLF-BLENDING LEWIS:** Despite the fact that the carrier is a very reliable carrier it has been removed.

2007 BNA. Collecte occurred off-pine ridge  
up to evening. Timey remnants of better yet  
best number exactly to this day.

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**ADULTS:** This rate refers to the total number of people with a driver's license or vehicle.

**The hand-cut freestyles.**  
**©Alfred Hill:** A bag of shredded paper

or death that comes in several forms, longish and pills.

**TRANSITION DIFFUSION:** Turns the sender on and off, a task. Differs because the sender gets involved previously in the routine. Same info.





and 24 inches in circumference, but there also are 4 by 11, 3 by 24, 3 by 32 and even diminutive 3 by 18 models, as well as a few specialty routers with bells barely as wide wide. These 3-hp perforated 4 by 24 beams that can rip through decades of paint, gnaw off nail heads or level wide cracks of wood. These router machines are heavy—some tip the scales at up to 15 pounds—but for Tom, that isn't always a concern. He can usually they work across a couple of workbenches and let the router's weight do the work as he moves.

Norm Abramson picks a small router for its maneuverability. "When you're trying to sand door casings without taking them off the joints," he says, "a 3 by 24 is nice." It may weigh less than six pounds, light enough to sand any handrail. Chopped to a workbench or suspended on a special stand, any belt router can be turned into a stationary tool, good for trimming stains and using small pieces of wood.

"The only way to know which one's



Intended for close-quarters work and handy for quick detailing, this router has a belt only 1 1/2 inches wide. A removable handle allows it to sneak into places other routers rarely go.

Best bags on belt routers make breathing a breeze. Most aren't disposable, but most are around all the bag to prevent dust at the work. Many routers can also be attached to a shop vac.



right for you," Tom says, "it's to built a bench of 'em." Pick a router, install the dust bag, then move the tool back and forth as if sanding a tabletop. Tip it sideways and sand the table's edges, then round over a sharp corner. Now try another. Check the feel of the handles as the tool's position changes, and see if the dust bag gets in the way. Install and remove a real sanding belt too, since belt change levers are necessary on all.

Belt routers are less than generators of routers, a known health risk. Dust bags help less even when trying to keep up with super-slow belts. Tom finds his router to a shop vac whenever possible, even for less demanding applications. He finds vacuum-mounted belts drag less, so they're able to cut faster, they also leave

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## True Grit

A sanding belt's work is done by layers of knif, about sharp abrasive granules. At grit, graded by size from super-coarse 30 grit to silky 320. Coarser grits peak the grit lightly, they're best for sanding metal and hardwood. Open-coat belts space out the grit to reduce clogging and so work better on soft, pliable woods like pine and for stripping paint. Aluminum-oxide grit, typically the best expensive, is good for general-duty wood sanding. New belts with alumina-chloride (the blue belts) or ceramic stannum oxide (the purple ones) remain shiny longer but are pricey and hard to find as grits much finer than 120. You never see belt finer than 150 grit, but you see a random-oxide sander for finishing.

All sanding-belt abrasives are embedded in resin stop a backing made of paper or cloth. Paper belts don't last. The best belts are cloth, either tightly woven cotton, polyester or a blend of the two. Polyester is more durable than pure cotton, but belt makers don't always identify the backing.

Until recently, all belts had glued-on lap joints that are lumpy. They will destruct unless they turn in the proper direction (reverse inside the joint where wheels are supported to rotate). New rollers have been built into the belt's lap joints, so they turn in the right direction. They also last 10 to 15 percent longer and tend to sand smoother than old-style belts. A worn or ragged belt has lousy traction. Sam knows it's time to clean or replace a belt when he doesn't have to rub his sanders as much.

A reinforced drive belt powers this sander's belt roller. The lip roller fits on the motor shaft and up from the belt and then it fits the belt.

Purple abrasives belts are coated with long-life ceramic stannum oxide granules.

less wear on the belt.

Before laying a sander on the work, Tom always checks how the belt is tracking over the base plate. If a belt wanders, he slowly turns the tracking knob as the sander is running until the belt is centered over the plate and stays there. It isn't necessary to do this often, Tom tracks his tool only when switching belts.

Belt sanders haven't changed much in recent years. Motors are lighter and more powerful, and drive legs have been added. Some sanders now have automatic belt tracking and variable speeds. Tim, who prices engines over technology, believes belt sanders should be simple and straight forward. "I can't really see the use of more than one speed," he says. His advice: Don't work a surface so hard that it heats up, and don't belt sand nerves.

Most problems occur when sanders are pressed hard. Mike Alessi says, "It takes a lot more of pressure to use a belt sander, because the portion of the belt under the plate is so small in relation to the rest of the tool." But once you learn how to drive one, the bulkiness of a tool can be manipulated like a sports car, delivering smooth, striped wood—fast.

Continued on page 148

# YESTERDAY'S MEMORIES... TODAY'S JOYS... TOMORROW'S TRADITIONS



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TQM 11/96

## Belt Ways

PHOTOGRAPHS BY KELLER & KELLER

1. Stripping joint glue out the best is a belt sander and the worst is belts. Tom Silva keeps his sander moving constantly so as not to overheat the surface and clog the belt. Old joint may better lend, so Tom uses a respirator and seals his 4-in.-24 in. a shop vac. When he gets down to bare wood, he switches from 36-grit to 120-grit and sands only with the grain. A random-orbit sander with a 220-grit disc finishes the job.

2. Tom smooths joints of cedar shingles by pushing back and forth in overlapping passes at an angle to the wood grain. Tight sections in the edge-glued boards can tip a shingle and gouge, so Tom shows the tool for greater stability. He'll take out the resulting cross-grain scratches by sanding with the grain.

3. Everything ripped and grain edges require an 80-grit belt, solid feeding and a good view of the surface. To keep the tool from slipping, Tom sandpaper the belt's outer surface, but he watches for a slight shadow between belt and wood, a telltale clue the sander isn't being held flat.

4. Rounding the ends of shingle legs with the right passes and consistent stroking, otherwise the sander leaves flat spots. Securing the work is a must. A sander can fit into places of wood that a block plane can't.



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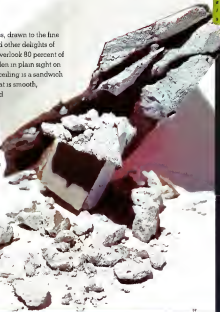
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at eyes, drawn to the fine  
woodwork, fancy tile and other delights of  
domestic architecture, overlook 80 percent of  
almost every room. Hidden in plain sight on  
virtually every wall and ceiling is a sandwich  
of paper and gypsum that is smooth,  
fire resistant and unloved.

Call it Sheetrock or  
wallboard, plasterboard or  
drywall, it's the modern dry  
replacement for plaster. And  
though drywall falls short of plas-  
ter's hardness and durability, it's  
cheap to buy and simple to install.  
A room can be painted in some as  
it's "rocked," but a flake coat,  
brush-applied plaster job must last  
over for 30 days. Thus drywall is  
king of wall and ceiling, wearing  
its crown by financial default.

At the heart of every dry-  
wall panel is gypsum, a  
whisk, chalky mineral.  
Legend has it that Ben  
Franklin used wood and gyp-  
sum plaster to the  
United States when he  
remained from France  
in 1783. Unlike the  
mud- and lime-based  
products that preceded it,  
panels of this brittle mix  
can't, made easily, set fast  
and turn rock hard. What's more,



## Wonder Rock

Drywall, the plaster substitute everyone loves to hate

BY DON BEST PHOTOGRAPH BY JAMES WORNELL

er's monotony, able to work with and extremely abundant by the latter half of the 18th century, it had become the plaster of choice in the United States.

In 1894, seeking to reduce the time and effort that quality plasterwork required, inventor Augustus Sackett discovered that plaster could be cast in a rectangular mold and reinforced with layers of felt paper to create a rigid board. He patented the process, improved it and introduced "Sackett Board" in 1896.

The product caught on as an underlayment for coats of finish plaster. By the 1920s, drywall began to surface

as a finished wall covering in its own right. The need during World War II for military construction work created drywall's acceptance and helped the industry gear up for the postwar housing boom.

Today, dry wall's dominance is secure. The United States produces

it in three volumes: 24 billion square feet each year (see *Believe It or Not*, p. 42). To meet the demand, millions of tons of gypsum rock are

Now gypsum rock fresh from a Texas mine is ready to be crushed, the next step on the way to becoming drywall.

extracted annually from quarries and mines in the Midwest, Canada and Mexico. Since the 1970s, dry-wall manufacturers have also been "mining" coal- and oil-fired power plants, where gypsum is a waste product of air-pollution control.

To turn raw gypsum into wallboard, the rock is crushed, then "caked"—cooked at 150 degrees until it turns into a dry powder called plaster of Paris or more simply. This plaster is mixed with water and additives to form a slurry that flows onto a continuous sheet of moving paper made from recycled newspapers. A second piece of paper rolls out on top. The resulting sandwich is fed through rollers that press it to uniform thickness from a quarter-inch to a full inch at eighth-inch increments. Quarter-inch board is flexible enough to lay

## Burn It, Splash It, Bash It



**Smooth**  
Sackett board has a special paper, tested for easy identification, that bonds tightly to newer plasters.



**Glassed**  
Drywall for outdoor use requires advanced technology to protect the core from the elements. This substrate for synthetic stone has a silicone-treated core and faces of yellow alkali-resistant fiberglass. Comes with a finger warning.



**Tough**  
These boards withstand abuse that would cause regular drywall to crumble. The top panel has a thick layer of pressure paper (the covering is typically one foot with more paper liner and profile). Green fiberglass mesh on the back provides additional reinforcement. The bottom board, faced with a 30-mil-thick sheet of Lexan, is 17 times stronger than conventional drywall.



**Cool**  
Regular drywall stands up well to the heat, but even stronger heat drives out the water in the plaster. (Gypsum is 20 percent water.) This 1/2-inch-thick board—used to withstand a 1,200-degree fire for two hours—contains additives such as glass fibers and carbonates that hold the panel together as the gypsum turns to dust.

**Foiled**  
In regions with cold, wet winters, aluminum-brake drywall stops moisture from seeping through walls and into wall cavities. The foil side always faces the inside of the cavity.



**Green**  
Green boards withstand fire for walls and ceilings in bathrooms. Builders put up this moisture-resistant drywall with green-fibered paper. The gypsum contains water-repellent wax emulsions, the paper is also specially treated. The work designed as an underlayment for wall tile, greeners of sheetrock® are used in showers or saunas that receive more than the occasional splash.



**Embossed**  
For the look of a classic raised wood panel without all the de-molding jacking, these gypsum-core boards have raised panels pressed into them.



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curved walls and ceilings, but most walls are clad in half-inch sheets. Their dimensions are needed where additional strength or fire resistance is important.

One of drywall's greatest virtues is how easily it can be customized. It comes in lengths up to 36 feet, and because of the growing popularity of high ceilings, manufacturers now offer 34-inch walls. Placed horizontally, two sheets can cover a nine-foot wall.

Lightweight gypsum's natural resistance to fire can be increased by embedding glass fibers or vermiculite in the core. Arsonists are being taught to combat plaster's biggest enemy—water—with silicone additives, wax

emulsions and fiberglass or plastic dusts.

Can these products, embedded in underlying mortar for

shower stalls, exterior walls, and even roofs, hold up? Yes, if the cores don't get wet.

Drywall's other weakness shows on impact. Furniture, cars, even

An oil-filled gambrel of wet gypsum plaster splits and crumbles into a meringue of paper and a factory. A modern drywall plant can produce about 5,000 square feet of drywall every minute.

doorbombs that bounce off a plaster wall can poke through half-inch dry wall with relative ease. Part of the reason is that the gypsum core is scored for toughness in sheets of half-inch drywall weighs 40 pounds, down from 80 in 1930, so scores and nails can penetrate easily. For impact-resistant drywall, companies mix paper fibers in the core, embed fiberglass mesh or apply thin sheets of Lexan, a clear, practically unbreakable plastic.

Despite all these improvements, drywall remains a remarkably inexpensive commodity—so inexpensive, it's easy to overlook its weather- and functional advantages. Even so in play days, plaster was ready as smooth as modern drywall or as easy to repair. And putting up drywall is a far more efficient process.

"You had a can't-get-any-wisper

## Put This in Your Pea Patch



What happens to all the left-over drywall a crop from this Old House project? Some of it ends up in landfills, of course. But in New England, a lot of that scrap drywall is trucked back to the Dene Williams Supply Co. in Tyngsboro, Massachusetts, for recycling. Since 1980, Dene Williams has provided the drywall for every This Old House project in New England, including the Victorian currently being renovated on Nantucket.

The company's pioneering work in recycling began in 1970, when owner Greg Dene reached an agreement with a huge drywall plant at nearby Hingham, New Hampshire. Like many work plants around the nation, the Hingham facility was already recycling its own manufacturing waste, its scrap consisting mostly of Dene's curing by-lots of corners, joints, extensions and head joints.

"The response has been great," Dene says. Every two weeks, the 30-yard dumpster is full completely full with chunks of broken drywall—about 80 tons' worth—brought by customers who pay a modest disposal fee.

At Parker, environmental manager for George-Foster's gypsum division, believes more drywall would be recycled if the scrap could be collected and transported cheaply.

Instead of throwing it in landfills, some people are recycling drywall directly into the soil. Farmers in California and parts of Colorado use recycled gypsum as a soil conditioner for grains, peas and potatoes. Potomac farmers working with corn in New York and turf in Maryland suggest that other crops could also benefit from a 100% drywall dust in the ground.

## Believe It or Not:

■ In 1994 a prodigious 24 billion (yes, billion) square feet of drywall retired out of U.S. homes. That's the equivalent of 720 million sheets of 5-inch half-drywall, enough to extend the interior of nearly 3 million average-size houses. Or...

■ If all that production were donated to the artist Christo, the Hingham supplier he would build the process and send it into a low land high wall 1.1 million miles long, which would circle the globe 44 times. Or, providing the local residents don't object, he could cover all of Orange County and San Francisco with a drywall blanket that miles square.

■ Stacking the joints face-to-face instead of end-to-end would create a compact wall 4 feet high by 3 feet thick and 3,721 miles long, just 65 miles short of the Trans-Alaska Pipeline's route from Alaska to Wisconsin.

■ Looked at another way, the 462.5 million cubic feet of plaster and paper produced every year could build 24 full-size pyramids of the Great Pyramid in Egypt.

■ Only a public-works project as immense as the Great Wall of China would exceed the United States' annual drywall production. Doubling the longest continuous portion of the wall—a section 12 feet wide by 10 feet high and 2,166 miles long—would set up about three and a half years' worth of wallboard.

## THE THINGS YOU BUILD WILL BE STANDING LONG AFTER YOU DIE. LEAVE A GOOD MARK.



Artists sign the bottoms of the canvas. Athletes set records. Yours is a more mobile signature. But if you do it right, your legacy won't fade. And it will never be broken.



## Hack Away

A saw that cuts through anything you can imagine

BY WILLIAM CAMPBON PHOTOGRAPHS BY MARTIN NESTRETTA

W  
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S



With its big, wide saw's unique lever system, *Hack-Away* is the best, fastest, and most accurate way to cut through anything you can imagine. It's the only saw that can cut through anything you can imagine. It's the only saw that can cut through anything you can imagine.

# h

acksaws are tools of last resort. No matter how hard the material or how desperate the situation, hacksaws refuse no challenges. With the right blade, enough muscle and plenty of time, a hacksaw can slice through virtually anything—steel, brass, glass, tile, concrete, ice, bone, even solid stone. Their little porcupine-sharp teeth never give up. Plumbers prize hacksaws for slicing through every type of pipe. Butchers use them to make short work of carcasses and frozen meat, and auto





Match the blade to the task, and good results are a cinch. As a rough guide, use coarse blades on thicker or softer materials, fine blades on harder or thinner ones. The coarsest blades, with 14 teeth per inch (top shown), are suitable for aluminum, plastic pipe and wood.

1. Choose an 18-tpi blade to cut copper, brass and other nonferrous materials, as well as metal rods and cast-iron pipes.

2. A 24-tpi blade is best for steel conduit and sheet metal no thicker than 1/4-inch.

3. Use 32-tpi blades on fiberglass tubing or sheet metal up to 1/4-inch thick or for routing router-bit laminates or plastic.

4. If Red and grit aren't the gift that keeps on giving—bricks, stone, masonry or glass blocks. For straight cuts, use grit sand, and score ahead of cuts.

## blade-running tips

**MAKING THE CUT:** Start by scoring the surface with a file or gently dragging the saw backward a couple of times. Once the kerf is deep enough, apply pressure only on the push stroke to avoid drilling or bending the blade.

**POSITIONING THE BLADE:** The work should point forward so the saw runs on the push stroke. Many blades have arrows to show the proper position.

**CUTTING THIN STOCK AND TURNING:** Use fine tooth blades and try to angle the saw so at least three teeth are cutting at once. On high tech alloys, "walk" the blade around instead of pushing straight through. Otherwise, teeth are likely to catch, bend or break.

**SAVING BLADES:** Turn a hacksaw into a fast-cutting file by working two or three blades in the frame at once.

## How to Ruin a Blade

Push hands saw blades too fast, and they'll just call it quits. (Left) Tightening a bolt blade can make it snap in two in 10 seconds. (Middle) Overheating a blade can give it a permanent heat treat. Forcing coarse blades through hard, thin-walled cast-iron blocks (right) can ruin the teeth. Instead of reaching through a nut, ease off and let the tool do the work.



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#### AMERICAN SHOWER & BATH

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The group "Floral Chippendale" china bowl and box set brings by Sherle Wagner add a touch of country flavor to the elegance of the line. Delicate floral designs combine with a 34-horizontally-ribbed "egg and dot" design. Several other elegant pieces, such as an undermount bowl, teapot, water closet, perfume, lavatory, a selection of accessories and ashtrays and hot/cold flasks are available for total coordination. For more information, call (313) 758-3700.





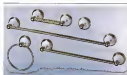
#### DELTA SELECT

The Delta Select™ International Collectors lavatory faucet offers a distinctive elegance and style for the bathroom. This stunning polished chrome and polished brass faucet adds a sleek look to any bath or powder room. Coordinate these stylish faucets with matching accessories—from towel bars to soap dishes—to complete the look of international elegance in your bath. For more information, call 1-800-345-DELTA or visit us on the Internet at [www.deltafaucet.com](http://www.deltafaucet.com)



#### AQUA GLASS

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#### ARTISTIC BRASS

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#### PLUMB SHOP

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#### KRAFTMAID

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#### STAR WATER SYSTEMS

The Accord® Water Systems by Star® Water Systems can soften hard water and remove iron and arsenic. Using less water and salt than conventional conditioners, the system utilizes only 26 square feet of floor space and stands just 25" high—yet it all boasts a minimal bed capacity that will handle most residential applications. For more information, call 1-800-345-0423.



#### KINDRED

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## Take 'Em With You

There's nothing handier than a well-worn tool belt.

BY WENDY TALARICO PHOTOGRAPHS BY DANIEL MOSS

**a** carpenter reveals a lot about himself by the

way he carries his tools. That's an important lesson Ted Fales, a member of the construction crew for the fall TV project in Nantucket, has learned during 16 years framing houses. "When a guy comes to a site asking for work, claiming years of experience, the first thing you look at is his tool belt," says Fales. A greenhorn carpenter, he observes, will typically sport a belt bristling with too many tools and buckle it tightly around

A tool belt is more than just an extra set of carpenter's pockets—it's the rugged symbol of a home-on wheels. In Henry Abraham's view, "It's as much of a tool as a hammer or a circular saw."





FRAMER

his waist. By contrast, Fales keeps his own soft leather tool belt lightly loaded, loose and slung low on his hips.

When Fales is at work, his hands dip with lightning quickness in and out of the pockets. He knows the contours of the belt so well he can find anything he needs—a utility knife, a speed square, a hammer, a handful of nails—without so much as a downward glance.

Durability is the first thing to look for when shopping for a tool belt. Tightly stretched seams and rust-resistant rivets or screw points are a must, and the pouches should be made from strong material. Canvas or cotton may be good enough for clerks at the lumberyard, but carpenters in the field need something tougher to resist the wear and tear from carrying chisels, knife blades, nails and other sharp objects.

Leather is the traditional material of choice. Tool belts made of top-grain cowhide—smooth on the outside and tough on the inside—take a lot of punishment, they also take a long time to break in. Like many carpenters, Fales would need a lot of can-

Four members of the Midwest project team volunteered to try an new tool belts.

Left: Framer Ted Fales promptly ditched his leather (bottom) model "the one-side." It has 10 separate pockets, which can easily swell up a and gun at a drill. Nice touch: Inside a back pocket with a Velcro flap—ideal for storing your vibrator. Fales used it to hold his vibrator.

work illustrations can't find that carpenter, so they just have pockets on only one side. The thick cowhide model has plenty of room for a thick handle in electric wire strippers, screwdrivers, snips and media-case pliers. The V-shaped one is for putting the belt in for the hole in his trousers a whole meter.

There are men more open when it comes to choosing the belt's hardware: as wide, metal buckles or plastic clips, front or back closure. Adjustability is the key, especially if the belt will be worn over light clothes in the summer and bulky wraps in the winter. The Old House contractor Tom Silva gave



ELECTRICIAN

himself before he considered a belt made of any thing but cloth canvas. On the other hand, Jimmy Copping, the lead electrician for this 14th television project on *Newsweek*, uses a wide tool belt. He's a tall, more rugged and easier to break in. The downside is that it's heavier and likely to wear out faster.

Nylon is a less expensive alternative to leather. Cushing, an Atlanta resident who's a father, is a leg and won't make or crack it if it gets wet. Joe Moore, product services manager for tool belt maker McGuire Nicholas, says a Cushing belt should last twice as long as a good leather one. "The biggest drawback is that nylon won't cut as fast as the body," he says. "It's like wearing plastic shoes instead of leather shoes."

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CARPENTER

increments, to be came up with a novel solution. He ripped off the buckle on his tool belt and replaced it with one from a car seat belt.

The size and number of pockets on a tool belt is largely a matter of taste. Some carpenters prefer pouches that slide along the belt. Others feel more comfortable with pouches that are sewn in place so they won't slip and slide. In either case, the pockets should have openings large enough to reach into and smooth items along the sides instead of the bottom, where they can hang out or other odds and ends.

Old habits and discomforts inevitably determine how an individual uses his tool belt. The Old House master carpenter Norm Abram is right-handed but usually hangs his 16-ounce hammer from a metal loop on his left side. He picked up the habit years ago when the right-hand loop broke on a one of his old tool belts. Now, even though he has to reach across his body every time he grabs for his hammer, a silver ring on the left-hand loop "it's a little okay," he says, "especially since I have a loop on the right side that sits okay."



ROOFER

Left: Framer Ted Fales promptly ditched his leather (bottom) model "the one-side." It has 10 separate pockets, which can easily swell up a and gun at a drill. Nice touch: Inside a back pocket with a Velcro flap—ideal for storing your vibrator. Fales used it to hold his vibrator.

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Fales about hammer loops and stuff, but 24 more framing basements at a deep right-side pocket. Working a hammer: far from a loop, he says, takes too much time.

A good tool belt will last at least three or four years, perhaps longer if it is stretched. For some carpenters, the real problem is what to do with an old belt once it wears out. Fales still keeps his first belt in the shop, despite the holes in the pouches and the ragged bits of thread that hang from the seams. "I can't throw it away," he says. "There are lots of memories in that belt."

Besides, breaking in a new one can be a some what traumatic experience. With many tool belts, it takes at least two weeks for soft pouches to stretch and for the leather or nylon to lose its store-height sheen. Indeed, brand-new tool belts stretch so much around a man's self-respecting carpenter's legs he has to know to stuff them in the dirt and wear them out the house for a few days before leaving a job site.

"The guys will make fun of you when you show up with a new belt," says Jimmy Copping. "That's guaranteed!"



## Norm's Sidekick

Norm Abrams is so attached to his cowhide belt that he wears it around the shop instead of grabbing tools off the shelf. "It's so easy to have all you need right at your waist," he says. This belt, which has been his faithful leg-side companion for years, has a cotton web harness with a plastic buckle in back and is very easy to get on and take off. The honey-colored pockets, with divided edges polished by age, have developed the swelling legs and humps that make a belt comfortable and give it character. "I like the way the leather feels," Norm says. "Smooth and substantial."

### INSIDE A MASTER CARPENTER'S BELT

Norm's legside companion (1) has a home in the front of the belt. He reserves the shallow outer pockets (2) for socks, cones and sandpaper and tucks larger items in the deep inside pockets. He fills the inside right pouch (3) with wrenches, driver bits, a mallet, a wood rasp and even a pair of pliers. When the job requires more tools, he slides them in the left inside pouch (4).



## A Personal Portable Tool Box



There is no perfect tool belt. Subtle differences—in the width of the harness, the way the belt buckles and the size and number of pockets—may meet the needs of one worker but not another. Some manufacturers offer special edition pouches and tool-holding accessories that can be attached to a particular type of task. If a pouch wears out, it may be tossed without disturbing the whole belt.

**HELP WANTED:** Strong, hardworking, dependable worker to assist in numerous large projects, including, but not limited to sawing, planing, sanding, nipping, routing and cutting. Must be able to press up to 350 lbs. Days, evenings, nights, weekends and holidays. No wimps, please.

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Turn your work surface into a clamping center.

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## Independent Tests Reveal New Cordless Drills The Competition.



Submitted: 10/2/2010

In head-to-head comparisons, Porter-Cable's new 92 volt cordless drill put the screws to all the rest. Against seven different drills in seven different categories, Porter-Cable came out first in five out of seven and a close second in the other two. With more torque, higher performance and longer life.

And unlike many of our competitors' comparisons, our tests were conducted by an independent lab, ensuring authentic, non-biased results."

If you're ready to bear down on your work, don't screw around. Get your hands on Porter-Cable's new 12 volt cordless. Now with these improved features:

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- High capacity batteries run 30% longer between charges than standard batteries
- 40 position adjustable clutch provides up to 208 in-lbs of torque
- Heavy-duty Jacobs® keyless chuck provides maximum gripping power
- Includes advanced charger with battery diagnostics for more efficient charging

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**The Numbers Speak For Themselves...Porter-Cable's 12-volt Boats Them All.**

MARLBORO TORQUE	104 5/8 IN. LONG BOLTS	#4-8 1 1/2" MOOD-SCREWS	TALGRIFFIT
POSTER-CABLE 24	POSTER-CABLE 24	POSTER-CABLE 120	POSTER-CABLE 25
BOSCH	BOSCH	BOSCH	BOSCH
DeWALT	DeWALT	DeWALT	DeWALT
MILWAUKEE	MILWAUKEE	MILWAUKEE	MILWAUKEE
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## Trip the Lights Fantastic

Electrifying the outdoors with holiday cheer

BY JENNIFER B. MARGOLIN PHOTOGRAPH BY KELLER & KELLER



Some folks revel in an exuberant display of holiday lights that brighten an entire neighborhood. Others delight in stringing up a few dozen bulbs to accent a tree or a porch. High wattage or low, outdoor lights are the stuff of memories. At one extreme is Harris Taormina, who for each of the past 35 winters has lighted up

the Divine Park section of Queens, New York, with the 10,000 lights that cover his house and yard.

Honorees Mark Charnoff and Mark Sellridge of Ninth Reading, Massachusetts, put a slightly more modest display. The Old Man's electrical company, Paul J. Kennedy recently won the porch of their two-story, LEEDs Green Reveal house to what may fairly be said five Premier lies in the yard, lost Douglas last by the driveway, and a few trash-spread on Christmas trees.

However, beautiful, sedulous holiday lighting schemes can be a disruptive one with winter movement. Anyone who wants a house to glow in the dark not only needs the right kinds of lights, but also weather-proof outlets, short-circuit-proof hardware and so on.

Kennedy often sees first-hand what happens when the rules of outdoor finance are ignored. He's been called all around Boston on



hoses where overloaded circuits have burned or shorted. One of Kennedy's friends once connected all his lights, plug into plug, and was baffled when the bulbs promptly burned out. "He kept running back to the store saying his lights were no good," Kennedy says.

The first step to avoiding trouble is to buy the right lights. Kennedy recommends only UL listed lights because they have been factory tested for safety and meet accepted electrical standards for installation.

Lights are should be used as partial or use about hypnosis. Otherwise, a single blown bulb will start the whole string off. Try to find the fused filament on a long string of lights is nobody's idea of holiday fun, especially on a cold December night.

Manometers are the most popular and least expensive outdoor decorative lights. They come in various lengths: 35-light sets hang on about 17 ft. hot of wall, 58-light sets on 25 ft. hot of wall.